

## **Claims**

What is claimed is:

1. An information display system for making a computer display objects including position information on an electronic map, said information display system  
5 comprising:
  - a database in which objects including position information and attribute information different from the position information are stored;
  - an electronic map storage section in which the electronic map is stored;
  - a set forming section which forms at least a certain number of sets of objects  
10 positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;
  - an arrangement for selecting the objects contained in each of the sets by locating position coordinates in the electronic map on which display is performed, displaying the  
15 selected objects according to the designated attributes of the selected objects while

assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

an arrangement for placing the objects and the indicating figure on the electronic map by using the designated position coordinates.

5           2. The information display system according to Claim 1, wherein said designation method includes an arrangement for determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and an arrangement for changing display parameters for the indicating figure by using a threshold value with  
10   respect to a target attribute class.

3. The information display system according to Claim 1, wherein said designation method includes an arrangement for determining the size of the indicating figure according to the scale of the electronic map, and

said placement method locates the boundary of the indicating figure on the  
15   electronic map and places a portion of the indicating figure contained in the electronic map on which the display is performed.

4. A server used in an information display system for making a computer display objects including position information on an electronic map, said server being connected to a network, said server comprising:

a database in which objects including position information and attribute  
5 information different from the position information are stored;

an electronic map storage section in which the electronic map is stored;

a search condition acquisition section which obtains conditions including a predetermined distance and designation of attribute information from a search query via the network, and making the server store the obtained conditions;

10 a set forming section which forms at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within the predetermined distance obtained from the search query;

an arrangement for selecting the objects contained in each of the sets by locating  
15 position coordinates in the electronic map on which display is performed, displaying the selected objects according to the designated attributes of the selected objects while

assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

an arrangement for generating search results including the position coordinates of the objects and the indicating figure on the electronic map by using the designated

5 position coordinates.

5. The server according to Claim 4, further comprising an arrangement for determining the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and an arrangement for changing display parameters for the indicating figure by using a threshold value with

10 respect to a target attribute class.

6. The server according to Claim 4, further comprising an arrangement for determining the size of the indicating figure according to the scale of the electronic map,

wherein said generation method locates the boundary of the indicating figure on the electronic map and generates search results including a portion of the indicating figure

15 contained in the electronic map on which the display is performed.

7. The server according to Claim 4, further comprising an arrangement for receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the received objects in the database.

8. An information display method for making a computer display objects  
5 including position information on an electronic map, said method comprising:

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of  
10 the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an  
15 indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and a step of placing the objects and the indicating figure on the electronic map by using the designated position coordinates,

wherein said designation step includes a step of determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and a step of changing display parameters for the indicating figure by using a threshold value with  
5 respect to a target attribute class.

9. The information display method according to Claim 8, wherein said designation step includes a step of determining the size of the indicating figure according to the scale of the electronic map, and

wherein said placement step includes locating the boundary of the indicating  
10 figure on the electronic map and placing a portion of the indicating figure contained in the electronic map on which the display is performed.

10. A server control method for making a server display objects including position information on an electronic map via a network, said method comprising:

a step of receiving a search query via the network, obtaining conditions including  
15 a predetermined distance and designation of attribute information from the search query, and making the server store the obtained conditions;

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including designated sorts of the attribute

5 information within the obtained predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an

10 indicating figure in an indicating form corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of generating search results including the placement of the objects and the indicating figure on the electronic map by using the designated position coordinates.

15 11. The server control method according to Claim 10, wherein said designation step includes a step of determining the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and

a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class.

12. The server control method according to Claim 10, wherein said designation step includes a step of determining the size of the indicating figure according to the scale of the electronic map, and wherein said generation step includes locating the boundary of the indicating figure on the electronic map and generating a portion of the indicating figure contained in the electronic map on which the display is performed.

13. The server control method according to Claim 10, further comprising a step of receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the received objects in the database.

14. A program for making a computer execute an information display method for displaying objects including position information on an electronic map, said program making the computer execute:

15 a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a

set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each  
5 of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of placing the objects and the indicating figure on the electronic map by  
10 using the designated position coordinates,

wherein said designation step includes a step of determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure.

15 15. The program according to Claim 14, wherein said designation step includes a step of determining the indicating figure according to the scale of the electronic map, and a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class, and wherein said placement step includes locating

the boundary of the indicating figure on the electronic map and placing on the electronic map a portion of the indicating figure contained in the electronic map on which the display is performed.

16. A program for executing a server control method for making a server display  
5 objects including position information on an electronic map via a network, said program making the server execute:

a step of receiving a search query via the network, obtaining conditions including a predetermined distance and designation of attribute information from the search query, and storing the obtained conditions in the server;

10 a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including designated sorts of the attribute information within the obtained predetermined distance;

15 a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected

objects according to the designated attributes of the selected objects while assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of generating search results including the objects and the indicating figure  
5 on the electronic map by using the designated position coordinates.

17. The program according to Claim 16, wherein said designation step includes a step of determining the indicating figure according to the scale of the electronic map, and a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class, and said generation step includes a step of locating  
10 the boundary of the indicating figure on the electronic map and placing on the electronic map a portion of the indicating figure contained in the electronic map on which the display is performed, and

wherein a step of receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the  
15 received objects in the database.

18. A computer-readable storage medium on which is recorded a program for making a computer execute an information display method for displaying objects

including position information on an electronic map, said program making the computer execute:

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a  
5 certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each  
10 of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an indicating figure in an indicating form corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed;  
and

15 a step of placing the objects and the indicating figure on the electronic map by using the designated position coordinates,

wherein said designation step includes a step of determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and a step of changing display parameters for the indicating figure by using a threshold value with  
5    respect to a target attribute class.

19. A computer-readable storage medium on which is recorded a program for executing a server control method for making a server display objects including position information on an electronic map via a network, said program making the server execute:

a step of receiving a search query via the network, obtaining conditions including  
10    a predetermined distance and designation of attribute information from the search query, and storing the obtained conditions in the server;

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a  
15    set of objects by selecting the objects including designated sorts of the attribute information within the obtained predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an  
5 indicating figure corresponding to the pair of the objects using a threshold value for a target attribute class, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of generating search results including the objects and the indicating figure on the electronic map by using the designated position coordinates.

10 20. A graphical user interface system for making a computer display position information by displaying objects including the position information on an electronic map, said graphical user interface system comprising:

a database in which objects including position information and attribute information different from the position information are stored;

15 an electronic map storage section in which the electronic map is stored;

a set forming section which forms at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the

objects including a certain number of designated sorts of the attribute information within a predetermined distance;

- an arrangement for reading out the electronic map which is stored in said electronic map storage section and on which display is performed, selecting the objects
- 5 contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an indicating figure corresponding to the pair of the objects using a threshold value for a target attribute class, and designating position coordinates for the objects and the indicating figure to be displayed; and
- 10 an arrangement for displaying search results including a plurality of the objects and the indicating figure on the electronic map by using the designated position coordinates.